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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,208	08/22/2003	Hideki Iwata	80329-0014 (W1037-01CI)	9026
23353	7590	11/03/2005	EXAMINER	
RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			COSTALES, SHRUTI S	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646,208

Applicant(s)

IWATA ET AL.

Examiner

Shruti S. Costales

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/22/03, 3/1/04, 5/17/04, 2/18/05, & 3/24/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements submitted on August 22, 2003 and February 18, 2005 were filed in compliance with the provisions of 37 CFR § 1.97. Accordingly, the information disclosure statements filed by the applicant have been considered by the Examiner.

The information disclosure statements submitted on March 1, 2004, May 17, 2004, and March 24, 2005, have not been fully considered by the Examiner. With respect to the information disclosure statements submitted on March 1, 2004 and March 24, 2005, the Non Patent Literature Documents have not been considered because the listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been

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considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

With respect to the information disclosure statement May 17, 2004, the U.S. Patent Documents and the Foreign Patent Documents are the same as those cited in the information disclosure statement submitted on March 1, 2004. Therefore, these duplicate documents in the May 17, 2004 have not been stricken. The Non Patent Literature Documents section of the May 17, 2004 information disclosure statement cites a "WPI Abstract". The Examiner is unable to locate said documents because either the applicant has not supplied a copy of the document or the identifier "WPI Abstract" is not sufficient to locate the document.

Specification

2. The abstract of the disclosure is objected to because it refers to and compares the invention with the prior art. See MPEP § 608.01(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "A sliding composition having a thermosetting resin, polytetrafluoroethylene, and bismuth and/or a bismuth alloy".

4. The disclosure is objected to because of the following minor informalities:

(i) On page 4 in paragraph [0019] under the section titled "BRIEF DESCRIPTION OF THE DRAWINGS", the applicant includes a discussion involving the various

reference numerals in FIG. 1. As a discussion involving the reference numerals shown in FIG. 1 is already appropriately included under the "DETAILED DESCRIPTION OF THE INVENTION" on page 5 of the specification, it is suggested that the applicant delete paragraph [0019] on page 4 of the specification.

(ii) On page 10 of the disclosure, under the heading "CLAIMS", the applicant introduces the statement "What is claimed as new and desired to be protected by Letters Patent of the United States is:". This statement is not in compliance with current U.S. patent practice and procedure. The applicant's attention is drawn to MPEP § 608.01(m), wherein it is provided that while there is no set statutory form for claims, the present Office practice is to insist that each claim must be the object of a sentence starting with "I (or we) claim," "The invention claimed is" (or the equivalent). Therefore, it is suggested that the applicant replace the statement "What is claimed as new and desired to be protected by Letters Patent of the United States is:" with "We claim:".

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More particularly, claims 1-3 recite a "polytetrafluoroethylene having a molecular weight of 3,000,000 or more", wherein it is not clear to one of ordinary skill in the art which particular type of molecular weight the

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applicant is referring to, such as number average molecular weight, viscosity average molecular weight, etc. Claims 4-18 are rejected under 35 U.S.C. 112, second paragraph, as being dependent from a rejected base claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 4, 7, 10, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2358866 cited on PTO-1449 submitted on May 17, 2004 in view of Srinivasan et al. (U.S. Patent Number 5,948,737) and GB 2337306 cited on PTO-1449 submitted on May 17, 2004.

'866 discloses a sliding material having polytetrafluoroethylene (Page 1, lines 3-5) and bismuth particles in an amount of 3 to 40% by volume (Page 2, lines 2-28). Bismuth alloy is also disclosed (Page 8, lines 4-11). It is further disclosed that resin is impregnated onto a metal layer, which is porous (Page 5, lines 10-20).

The difference between '866 and the presently claimed invention is the requirement that (i) that PTFE has a molecular weight of 3,000,000 or more, (ii) a thermosetting resin is added to the sliding composition in an amount of 50 to 80 vol% and a solid lubricant is added in an amount of 1 to 30 vol%, and (iii) an alkaline earth metal salt is added in an amount of 1 to 20 vol%.

With respect to the difference in (i), Srinivasan, which is drawn to greases to be used with moving objects (Col. 1, lines 8-11), discloses PTFE having a number average molecular weight of 300,000 to 100,000,000 (Col. 2, lines 53-61). It would have been obvious to one of ordinary skill in the art to use high molecular weight PTFE as disclosed by Srinivasan in the sliding composition of '866 because such a high molecular weight PTFE acts as a thickener (Col. 2, lines 53-61).

With respect to the difference in (ii), '306, which is drawn to a sliding member used as a bearing or the like (Page 1, lines 2-3), discloses a thermosetting resin such as an epoxy resin, a phenolic resin, a polyimide resin, and a polyamide-imide resin to be used in the sliding member (Page 4, lines 18-28). A solid lubricant such as graphite and molybdenum disulfide is also disclosed (Page 5, lines 2-5). The thermosetting resin is added in an amount of 30% to 90% and the solid lubricant molybdenum disulfide is added in an amount of 10% to 70% (Table 1 on Page 9), wherein the amounts of the thermosetting resin and the solid lubricant are disclosed in a broad range to intrinsically encompass the presently claimed amounts in vol%. It would have been obvious to one of ordinary skill in the art to add '306's thermosetting resin and solid lubricant to '866 because the resulting sliding composition and member will have enhanced fatigue resistance and load capacity (Page 4, lines 1-3 and Page 2, lines 8-11; see also Page 6, lines 9-14) along with an improved coefficient of friction (Page 5, lines 2-5), thereby obtaining the invention as set forth in the presently cited claims.

9. Claims 2, 3, 5, 6, 8, 9, 11, 12, 14, 15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over '866 in view of Srinivasan and '306 as applied to claims 1, 4, 7, 10, 13, and 16 above, and further in view of Clark (U.S. Patent Number 3,909,424).

The difference between '866 in view of Srinivasan and '306 is the requirement that an alkaline earth metal salt is added to the sliding composition in an amount of 1 to 20 vol%.

Clark, which is drawn to solid lubricant compositions (Col. 1, lines 4-6), discloses solid lubricants and resins such as phenolic resins (Col. 1, lines 10-68 and Col. 2, lines 1-19). Clark also discloses alkali metal salts such as potassium formate in an amount of 0.05 to 1 wt% (Col. 4, lines 8-39). It would have been obvious to one of ordinary skill in the art to add Clark's alkali metal salts to the sliding composition of '866 in view of Srinivasan and '306 because these alkali metal salts act as catalysts providing milder curing conditions and controlled pH levels resulting in increased stability to the sliding composition and sliding member produced therefrom (Col. 4, lines 8-39), thereby obtaining the invention as set forth in the presently cited claims.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shruti S. Costales whose telephone number is (571) 272-8389. The examiner can normally be reached on Monday - Friday, 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

SSC
Shruti S. Costales
October 31, 2005

Vasu Jagannathan
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